

In the Claims:

1 1. [Previously Presented] A method for measuring optical density, the
2 method comprising:
3 using electrical circuitry, determining a color on an area;
4 using electrical circuitry, selecting, based on the color, one of a plurality
5 of different illumination sources appropriate to determine optical density of the
6 color on the area;
7 illuminating the area with the selected illumination source;
8 receiving radiation from the area responsive to the illuminating; and
9 converting the received radiation to a signal indicative of optical density
10 of the color on the area.

1 2. [Original] A method for measuring optical density according to
2 claim 1, wherein the signal indicative of optical density comprises a standardized
3 signal indicative of standardized optical density.

1 3. [Original] A method for measuring optical density according to
2 claim 2, wherein the converting comprises:
3 selecting a look-up table based on the color on the area, wherein the look-
4 up table associates the received radiation with a standardized signal indicative of
5 standardized optical density.

1 4. [Original] A method for measuring optical density according to
2 claim 2, wherein the selected illumination source provides illumination having a
3 first spectrum and said converting comprises compensating for at least one
4 difference between the first spectrum and a standard spectrum to generate the
5 standardized signal indicative of standardized optical density.

1 5. [Original] A method for measuring optical density according to
2 claim 2, further comprising:
3 generating a look-up table for converting the received radiation to the
4 standardized signal indicative of standardized optical density.

1 6. [Original] A method for measuring optical density according to
2 claim 1, wherein converting the received radiation to a signal indicative of
3 optical density comprises:

4 compensating for the effects of heating of the selected illumination
5 source during illumination of the area.

1 7. [Original] A method for measuring optical density according to
2 claim 6, wherein the selected illumination source comprises a light emitting
3 diode and the compensating for the effects of heating comprises measuring the
4 voltage across the light emitting diode.

1 8. [Original] A method for measuring optical density according to
2 claim 7, wherein the compensating for the effects of heating further comprises
3 generating a corrected signal indicative of optical density using a non-linear
4 relationship between the voltage across the light emitting diode and the signal
5 indicative of optical density.

1 9. [Previously Presented] A method for calibrating a printing
2 apparatus, the method comprising:

3 printing an area having a color;

4 based on the color, automatically selecting one of a plurality of different
5 illumination sources in a densitometer without user input;

6 illuminating the area using the selected illumination source; and

7 receiving a signal indicative of optical density in the area from the
8 densitometer after the selecting.

1 10. [Original] A method for calibrating a printing apparatus according
2 to claim 9, wherein:

3 the printing comprises printing a plurality of areas, each having a color;
4 and

5 the receiving comprises receiving a signal indicative of optical density in
6 each of the areas.

1 11. [Original] A method for calibrating a printing apparatus according
2 to claim 9, wherein the signal indicative of optical density comprises a
3 standardized signal indicative of standardized optical density.

1 12. [Original] A method for calibrating a printing apparatus according
2 to claim 9, further comprising:
3 compensating for the effects of heating of the selected illumination
4 source during illumination of the area.

1 13. [Original] A densitometer comprising:
2 at least a first illumination source to illuminate an area;
3 a sensor for converting radiation received from the area; and
4 a processor coupled to the sensor for converting the received radiation to
5 a standardized signal indicative of standardized optical density.

1 14. [Original] A densitometer according to claim 13, further
2 comprising a plurality of illumination sources.

1 15. [Original] A densitometer according to claim 14, wherein the
2 plurality of illumination sources comprise light emitting diodes.

1 16. [Original] A densitometer according to claim 13, wherein the
2 processor is further configured to compensate for the effects of heating of the
3 illumination source during illumination.

1 17. [Currently Amended] A densitometer according to claim 13,
2 wherein the processor is further configured to determine a color of the area and
3 select one of a plurality of different illumination sources for use to determine the
4 standardized optical density of the color of the area, and wherein the selection is
5 responsive to the determination of the color.

1 18. [Original] A densitometer according to claim 13, further
2 comprising a memory coupled to the processor, wherein the memory stores a
3 look-up table for converting the received radiation to the standardized signal
4 indicative of standardized optical density.

1 19. [Original] A densitometer according to claim 13, wherein the first
2 illumination source is selected from a plurality of illumination sources selected
3 from the set consisting of red, green, blue, and orange.

1 20. [Previously Presented] A densitometer according to claim 19,
2 wherein the first illumination source is selected from the plurality of illumination
3 sources based on the source having a color that is substantially a color
4 complement to an area of a media to be measured.

1 21. [Original] A densitometer according to claim 13, further
2 comprising a memory for receiving and storing data regarding inks used to print
3 one or more areas to be measured, and means for accessing the stored data to
4 determine the color printed on an area, the data being used to select a spectral
5 wavelength of the at least a first illumination source.

1 22. [Original] A densitometer according to claim 13, wherein the at
2 least a first illumination source to illuminate an area is exactly a single
3 illumination source having a spectral wavelength range narrower than the
4 spectrum of visible white light.

1 23. [Original] A densitometer according to claim 22, wherein the
2 single illumination source having a spectral wavelength range narrower than the
3 spectrum of visible white light comprises a light emitting diode having one of a
4 red, green, blue, orange color spectral output.

1 24. [Original] An article printed using the method of measuring optical
2 density of claim 1.

1 25. [Previously Presented] A printing apparatus comprising:
2 means for printing at least one ink on an area;
3 a controller coupled to the means for printing; and
4 a densitometer coupled to the controller, the densitometer positioned to
5 illuminate the area and generate a standardized signal indicative of standardized
6 optical density of the area responsive to the illumination.

1 26. [Original] The printing apparatus of claim 25, wherein the
2 densitometer comprises at least one light emitting diode.

1 27. [Original] The printing apparatus of claim 25, wherein the
2 densitometer comprises a sensor positioned to receive radiation from the area.

1 28. [Previously Presented] The printing apparatus of claim 25, wherein
2 the densitometer is configured to determine the color of ink printed on the area
3 and to select at least one of a plurality of different illumination sources for the
4 illumination and corresponding to the determination of the color of ink.

1 29. [Original] A printing media printed with the printing apparatus of
2 claim 25.

1 30. [Previously Presented] A method for measuring optical density
2 according to claim 1, wherein the determining comprises using data regarding a
3 marking agent used to print the color on the area.

1 31. [Previously Presented] A method for measuring optical density
2 according to claim 30, wherein image data is used to print the color on the area,
3 and wherein the data regarding the marking agent is accessed from the image
4 data.

1 32. [Previously Presented] A method for measuring optical density
2 according to claim 30, wherein the data is provided before the determining.

1 33. [Previously Presented] A method for measuring optical density
2 according to claim 30, wherein the data is provided during the printing of the
3 marking agent on the area and the data indicates the color of the marking agent
4 used to print the color on the area.

1 34. [Previously Presented] A method for measuring optical density
2 according to claim 30, further comprising accessing the data from storage
3 circuitry.

1 35. [Previously Presented] A method for measuring optical density
2 according to claim 1, wherein the determining comprises determining without
3 sensing of the area.

1 36. [Previously Presented] A method for measuring optical density
2 according to claim 1, wherein the determining comprises determining before
3 completion of printing of the color on the area.

1 37. [Previously Presented] A method for calibrating a printing
2 apparatus according to claim 9, wherein the printing comprises providing data
3 regarding a color of a marking agent used for the printing, and wherein the
4 automatically selecting comprises selecting using the data.

1 38. [Previously Presented] A densitometer according to claim 13,
2 wherein the standardized optical density provides optical density information in
3 accordance with a standard predefined before the conversion of the received
4 radiation to the standardized signal.

1 39. [Previously Presented] A densitometer according to claim 38,
2 wherein the processor is configured to convert the received radiation to a signal
3 indicative of optical density and to convert the signal indicative of optical density
4 to the standardized signal indicative of standardized optical density.

1 40. [Previously Presented] A densitometer according to claim 17,
2 wherein the processor is configured to select the one illumination source using
3 data generated during printing of a marking agent on the area.

1 41. [Previously Presented] The printing apparatus of claim 25, wherein
2 the means for printing comprises means for providing data regarding the at least
3 one ink, and one of a plurality of different illuminant sources of the densitometer
4 is selected for the illumination using the data regarding the at least one ink.

1 42. [Previously Presented] The printing apparatus of claim 41, wherein
2 the data is provided before completion of the printing of the at least one ink on
3 the area.

1 43. [Previously Presented] The printing apparatus of claim 25, wherein
2 the standardized optical density provides optical density information according to
3 a standard predefined before the illumination of the area.

1 44. [Previously Presented] The printing apparatus of claim 43, wherein
2 the densitometer is configured to convert a signal indicative of optical density to
3 the standardized signal indicative of standardized optical density.

1 45. [New] A method for measuring optical density according to claim
2 1, wherein the illuminating comprises illuminating only using the selected one of
3 the different illumination sources, the receiving comprises receiving the radiation
4 responsive to the illuminating using only the selected one of the different
5 illumination sources, and the converting comprises converting only the received
6 radiation to the signal indicative of the optical density of the color on the area.

1 46. [New] A method for calibrating a printing apparatus according to
2 claim 9, wherein the illuminating comprises illuminating only using the selected
3 one of the different illumination sources, and further comprising generating the
4 signal indicative of the optical density in the area using only the illuminating of
5 the area using only the selected one of the different illumination sources.